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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,270

10/31/2005

Rudolf Singer

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EXAMINER

HUG, ERIC J

ART UNIT

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1791

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/532,270	<b>Applicant(s)</b> SINGER ET AL.	
	<b>Examiner</b> Eric Hug	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2005 and 31 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 8 and 9 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 4, 5, 8, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals

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and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 2 recites the broad recitation 0.5 to 3 mm, and the claim also recites 0.7 to 1.5 mm which is the narrower statement of the range/limitation.

Claim 4 recites the limitation "the lower section". There is insufficient antecedent basis for this limitation in the claim. It would be preferred to recite "the lower segment of the surface", to be consistent with the language of claims 1 and 3.

Regarding claim 5, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitation following the phrase is part of the claimed invention.

See MPEP § 2173.05(d).

Claims 8 and 9 provide for the use of the claimed refining chamber, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Simmons (US 2,750,161).

Simmons discloses a stirring apparatus for removing inhomogeneities in a stream of molten glass. The apparatus comprises an elliptical container 1 with an inlet and an outlet for the molten glass to flow through. Disposed within the container are rotating blades 7, 8 for stirring the glass. The container, blades, and blade stems 6 can be made of platinum. See column 1, lines 33-66. The elliptical shape reads on the claimed "wherein the cross section of the refining chamber is, in at least one segment, shaped in the form of an ellipse or an oval so that in the operating position the length of a horizontal line that divides the surface of the cross section into a lower and an upper section of the surface, both of which have essentially the same area, is greater than twice the maximum vertical extent of the lower segment of the surface".

Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Takei et al (US 6,308,534), or in the alternative, as being unpatentable over Takei.

Takei discloses a vacuum degassing apparatus (vacuum refiner) for molten glass having an uprising pipe 16, a vacuum degassing vessel 14, and a downfalling pipe 18 (as indicated in Figure 1). The shapes of the uprising pipe 16 and the downfalling pipe 18 are tubular, which may have a circular, elliptical, square, rectangular, or polygonal cross-sectional shape. See column 6, lines 9-14. The pipes may comprise a lining of noble metal, such as platinum or platinum alloy. See column 10, lines 29-36. The vacuum degassing chamber is made of less expensive refractory brick, which enables Takei to construct a larger apparatus than previously possible with platinum. In this regard, Takei discloses that otherwise the conventional material of choice for the apparatus is platinum or platinum alloy such as platinum rhodium. In this instance, the uprising pipe, vacuum chamber, and downfalling pipe are constituted by circular shells made of the noble metal. By using a noble metal material, there are no inclusion of impurities in the molten glass arising from the use of refractory bricks. See column 1 and column 2. Thus, Takei discloses that the uprising and downfalling pipes may constitute platinum, and Takei suggests that the refining chamber itself can also be made of a platinum material.

Regarding claim 1, Takei discloses the claimed apparatus having the features described above, wherein the elliptical shape reads on the claimed "wherein the cross section of the refining chamber is, in at least one segment, shaped in the form of an ellipse or an oval so that in the operating position the length of a horizontal line that divides the surface of the cross section into a lower and an upper section of the surface, both of which have essentially the same area, is

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greater than twice the maximum vertical extent of the lower segment of the surface".

Accordingly, the apparatus of Takei performs the method of claim 6 for molten glass at a temperature of up to 1400°C, which is within the claimed temperature range.

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takei.

Regarding claims 3 and 4, particularly the elliptical shape of the tubing, Takei does not disclose the claimed ratios of dimensions. Given the teachings of Takei, it would have obvious to employ optimum or workable dimensions, including those claimed, in order to maximize the efficiency of the refining. *In re Boesch*, 617 F.2d 272,276 (CCPA 1980) (Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.). *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) ("It is not inventive to discover the optimum or workable ranges by routine experimentation."). Applicant also has not shown that the claimed dimensions are critical or achieve unexpected results relative to the prior art. For these reasons, claims 3 and 4 are unpatentable.

Regarding claim 5, the choice of a known platinum material based on its suitability for the intended use is within the skill of a routineer in the art. *In re Leshin*, 125 USPQ 416 (CCPA 1960). For this reason, claim 5 is unpatentable.

*Allowable Subject Matter*

Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 2 would be allowable for further providing a wall of thickness 0.5 to 3 mm stiffened by any one of the shaping measures at the circumference.

Claim 7 is allowable for producing the refining chamber by a process comprising using a mold having radial corrugation to thereby form such radial corrugations on a smooth-walled tubular segment inserted into the mold.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is (571) 272-1192.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Hug/  
Primary Examiner